

TECHNICAL NOTES

U. S. DEPARTMENT OF AGRICULTURE

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Sage Grouse

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U.S. DEPARTMENT OF AGRICULTURE

WYOMING

SOIL CONSERVATION SERVICE

Biology No. 220

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Subject: SAGE GROUSE*

General

The sage grouse (Centrocercus urophasianus) is entirely dependent on sagebrush (Artemisia spp.) for food and cover. Sage grouse distribution cannot be documented without first considering the distribution of sagebrush.

Food Requirements

Sage grouse eat only soft material because of their lack of a muscular gizzard. Food habit studies throughout the range of the sage grouse have clearly indicated their dependence on sagebrush from October through April. Forbs become important in the diet in early spring. Important forbs for both juveniles and adults in Montana were common dandelion (Taraxacum officinale), salsify (Trogoon spp.), fringed sagewort, and prickly lettuce (Lactuca serriola). Ants, grasshoppers, and beetles were some of the more common animal foods of juveniles up to 12 weeks old.

Water Requirements

Sage grouse reach highest densities where a water source is available, but do not require open water for their day-to-day survival. Broods move to areas of free water or more succulent vegetation in late summer and fall. Fall movements to more moist areas were also documented in Idaho. One study reported that sage grouse in Utah were rarely found more than 1 mi (1.6 km) from water.



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*Information taken from Ecoregion M3113 Handbook and Habitat Suitability Index Models, Wildlife Species Narratives (literature searches), U.S. Fish and Wildlife Service, various dates between 1978-1985.

Cover Requirements

Winter habitat is extremely important to the survival of the sage grouse. One study reports that winter distribution of sage grouse in Colorado is affected by slope, aspect, and availability of sagebrush above the snow. Most grouse were found in sagebrush stands on southwestern exposures having slopes of less than 15 percent. Typical winter sage grouse habitat in Montana had sagebrush stands with an average canopy cover of 20 percent or more and an average height of 10 in. (25.4 cm) on land having little if any slope. Another study reported that when snow depths exceeded 12 in. (30.48 cm), sage grouse were restricted to about 7 percent of their normal range where taller sagebrush stands occurred. In Colorado, sage grouse may be restricted to less than 10 percent of the sagebrush-dominated areas during the winter.

Reproductive Requirements

Sage grouse prefer open areas of 0.1 to 10.0 acres (0.04 to 4.05 ha) for strutting. These strutting grounds (leks) are the center for all reproductive activity.

One study reported that 90 percent of all nests found in central Montana were within 3 mi (4.8 km) of the strutting grounds. In Colorado, 20 of 23 nests were found within 2 mi (3.2 km) of a lek.

Ninety-two percent of all nests in Wyoming were under sagebrush plants. The highest nest density in Utah was found in second growth sagebrush. Several studies reported almost exclusive selection of sagebrush for nesting cover.

Concealment may be the most important aspect of nesting cover. Sagebrush selected by nesting sage grouse in Colorado ranged in height from 11 to 25 in. (27.9 to 63.5 cm). Most nests are located under the tallest sagebrush plants in a specific area.

One study found that sage grouse usually nested on drier sites with a sagebrush canopy cover of 20 to 40 percent. In Montana, stands of 20 to 30 percent canopy cover were most frequently selected. Another study found that successful nests had a higher average sagebrush canopy cover (27 percent) than those of unsuccessful nests (20 percent).

Broods occupy areas with fewer sagebrush plants and more forbs than in the adjacent sagebrush community. One study reported that most broods in Montana occupied areas having an average sagebrush canopy cover of 14 percent. It was reported that broods in Montana inhabited sagebrush with a canopy cover of 14 percent in June, but moved to areas of 21 percent cover in September. One author had similar findings in his study of juvenile grouse in central Montana.

Special Habitat Requirements

No special habitat requirements were found in literature.

Interspersion Requirements

Daily movements of sage grouse are variable depending on sex and age of grouse, time of year, and food availability. Juvenile grouse normally limit their daily movements to less than 0.5 mi (0.8 km). Winter ranges of five instrumented females in central Montana ranged from approximately 2,615 to 7,760 acres (1,046 to 3,104 ha).

In winter, sage grouse may travel only a short distance or many miles to areas of less snow cover. In Wyoming, one study recorded grouse movements of up to 100 mi (160 km) from summer to winter ranges.

Special Considerations

One study states: "The welfare and continued survival of sage grouse populations is more closely influenced by the availability and distribution of sagebrush than by any other factor in the birds' environment."

Male sage grouse completely abandoned a lek following spraying of a 63 percent decline in strutting males following a loss of only 31 percent of habitat adjacent to a lek.

Sagebrush control has been directed towards dense stands on flat to gentle slopes. These areas provide most of the winter habitat for sage grouse and are essential to the survival of the sage grouse.

